

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

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on November 17, 2006Signature Typed or printed name Travis M. Wohlers

Application Number

09/776,252

Filed

02/02/2001

First Named Inventor

Andrew Ellington

Art Unit

1634

Examiner

Betty J. Forman

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐

applicant/inventor.

☐

assignee of record of the entire interest.

See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)☒

attorney or agent of record.

Registration number 57,423☐

attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____



Signature

Travis M. Wohlers

Typed or printed name

512-536-5654

Telephone number

November 17, 2006

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.☐

*Total of _____ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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ARGUMENTS IN SUPPORT OF PRE-APPEAL BRIEF REQUEST FOR 09/776,252

A. The New Matter Rejection is Legally Unsupported

The Action asserts that the phrase “not by means of a separate quenching molecule” in claim 29 introduces new matter. Applicant traverses this rejection.

To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991). The disclosure in the present specification would convey to a person of ordinary skill in the art that the optical signal produced by the reporter molecule covalently attached to the signaling aptamer is quenched by the aptamer’s conformation and not by means of a separate quenching molecule covalently coupled to the signaling aptamer. The working examples provided in the present specification demonstrated that a ligand-dependent differential optical signal can be produced by a signaling aptamer in which a single reporter molecule has been covalently appended. For example, the signaling aptamer ATP-R-Ac13 has a single acridine moiety introduced in the place of the adenosine at position 13 of the aptamer (*see* p. 21, ln. 16-18, and FIG. 2A). The signaling aptamer DFL7-8 has a single fluorescein molecule inserted between residues 7 and 8 of the aptamer (*see* p. 21, ln. 18 to p. 22, ln. 2, and FIG. 2B). As evident from the description of these aptamers, quencher molecules were not incorporated into their sequences (*see e.g.*, p 17, ln. 1 to p. 18, ln. 10; p. 20, ln. 13 to p. 22, ln. 8; and FIGs. 2A and 2B). The ATP-R-Ac13 and DFL7-8 aptamers showed marked increases in fluorescence intensity in the presence of their ligand (p. 22, ln. 6-8). Thus, the aptamers of the presently claimed invention do not require a separate quencher molecule appended to the aptamer to mediate the optical signal produced by the reporter molecule.

In rejecting a claim under the written description requirement, the Examiner has the initial burden of presenting evidence or reasons why a person skilled in the art would not recognize in an Applicant’s disclosure a description of the invention defined in the claims. *In re Wertheim*, 541 F.2d 257, 262 (CCPA 1976). The Examiner has not satisfied this burden. The Examiner has not identified any passages in the present specification that indicate that the signaling aptamers contain separate, covalently coupled quenching molecules. In fact, the Examiner acknowledges that the ATP-R-Ac13 and DFL7-8 aptamers are not described as having

quenching molecules (Action, p. 3).

Moreover, the Examiner states that “[w]hile the two aptamers provided in the specification are not described as having a quenching molecule, the aptamers function as quenchers.” (Action, p. 3). Thus, it appears that the Examiner understands the specification to disclose that the optical signal produced by the reporter molecule is quenched by the aptamer’s conformation and not by means of a separate quenching molecule covalently coupled to the signaling aptamer. This indicates that a person skilled in the art would recognize in an Applicant’s disclosure a description of the invention defined in the claims.

It appears that the Examiner is rejecting the claims because there is no *in haec verba* recitation of the phrase “not by means of a separate quenching molecule covalently coupled to the signaling aptamer.” This position is legally unsupported, as there is no *in haec verba* requirement for written description. *Union Oil Co. of California v. Atlantic Richfield Co.*, 208 F.3d 989, 997, 54 USPQ 2d 1227, 1232 (Fed. Cir. 2000). Likewise, the Board has stated that a lack of literal support does not, in and of itself, establish a *prima facie* case for lack of adequate written description. *Ex Parte Parks*, 30 U.S.P.Q.2D (BNA) 1234 (BPAI 1993). In *In re Parks*, the examiner rejected the claims on the grounds that there was no literal basis for the claim limitation “in the absence of a catalyst.” *Id.* The Board reversed the examiner’s rejection noting that “Throughout the discussion which would seem to cry out for a catalyst if one were used, no mention is made of a catalyst.” *Id.*

In determining whether a claim satisfies the written description requirement, the question is whether the specification conveys to the those skilled in the art that, as of the filing date, the applicant was in possession of the claimed invention (MPEP § 2163.02). Furthermore, “[t]he written description requirement does not require the applicant ‘to describe exactly the subject matter claimed, [instead] the description must clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed.’” *Union Oil Co. of California* 208 F.3d at 997. As described in the preceding paragraphs, those of skill in the art would understand that Applicant was in possession, at the time the application was filed, of a method in which the optical signal produced by the reporter molecule covalently attached to the signaling aptamer is quenched by the aptamer’s conformation and not by means of a separate quenching molecule covalently coupled to the signaling aptamer. Applicant, therefore, respectfully requests the

withdrawal of this rejection.

B. The Anticipation Rejections Are Legally and Factually Unsupported

1. The Gold Reference

Claims 29-37 and 40-43 were rejected under § 102(e) as being anticipated by Gold et al (U.S. Patent No. 6,242,246). Applicant traverses this rejection.

Gold does not teach a method that comprises providing a signaling aptamer comprising a reporter molecule covalently coupled to an aptamer, wherein in an unbound state an optical signal produced by the reporter molecule *is quenched by the aptamer's conformation and not by means of a separate quenching molecule covalently coupled to the signaling aptamer*, relative to the optical signal produced by the reporter molecule when the aptamer undergoes a conformational change upon binding to its ligand. Rather, Gold discloses a method for quenching a fluorescent molecule using a fluorescent molecule and a separate quenching molecule covalently coupled to the signaling aptamer. Gold refers to the fluorescent molecule and the quencher molecule as “an energy transfer pair” (Col. 13, ln. 41-42; FIG. 5). An example of an energy transfer pair is fluorescein and tetramethylrhodamine (Col. 11, ln. 54-57). As illustrated in FIG. 5 of Gold (reproduced below), which the Action specifically cited to in support of its §102(e) rejection, fluorescence is quenched by a quenching molecule (52) in close proximity to the fluorescence molecule (53).

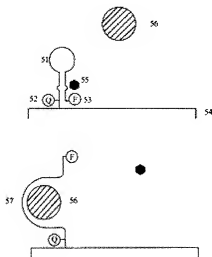


Fig. 5

In contrast, FIGs. 2A and 2B of the present specification disclose a fluorescence molecule (F) *with no separate quenching molecule covalently coupled to the signaling aptamer*, the absence of which represents an advance over the cited art. An advantage of Applicant's method is that it obviates the need for a quenching molecule to be engineered onto the aptamer.

Because Gold teaches a method whereby the fluorescence molecule is quenched by a quenching molecule rather than by the conformational change itself, Gold does not teach every element of Claim 29. Gold therefore does not anticipate independent Claim 29 or dependent Claims 30-37 and 40-43 under §102(e). Applicant, therefore, respectfully requests the withdrawal of this rejection.

2. The Royer Reference

The Action rejects claims 29-34, 36-37, and 41 under § 102(b) as being anticipated by Royer (U.S. Patent 5,445,935). Applicant traverses this rejection.

The Action has failed to establish a *prima facie* case of anticipation. Royer does not teach a method that comprises providing a signaling aptamer comprising a reporter molecule covalently coupled to an aptamer, wherein in an unbound state an optical signal produced by the reporter molecule *is quenched by the aptamer's conformation and not by means of a separate quenching molecule covalently coupled to the signaling aptamer*, relative to the optical signal produced by the reporter molecule when the aptamer undergoes a conformational change upon binding to its ligand. Rather, Royer discloses a method of detecting a target compound in a sample by measuring the polarization of a fluorescently labeled molecule (*see e.g.*, Royer, col. 4, ln. 10-47). Polarization values depend upon solvent diffusion and tumbling motion of the fluorescent molecule (*see* Royer, col. 4, ln. 21-28). When a fluorescently labeled molecule binds with the target compound, its size is effectively increased and the tumbling slows, which changes the polarization (*see* Royer, col. 4, ln. 21-28). Thus, according to Royer's method, the target compound is detected by a change in polarization value which is the result of the slowing of the fluorescently labeled molecule's tumbling speed. In contrast, according to the methods of the present invention the change in the optical signal is the result of a conformational change to the signaling aptamer. Accordingly, Royer does not teach every element of the current claims. Applicant, therefore, respectfully requests the withdrawal of this rejection.

C. Rejections Under 35 U.S.C. §103(a)

Claims 38-39 were rejected under §103(a) as being obvious over Gold as defined by Pitner (U.S. Patent No. 5,650,275) in view of Szostak (U.S. Patent No. 5,631,146). The Action states that Gold does not teach anti-adenosine aptamers as in claims 38-39. The Action asserts, however, that Szostak teaches anti-adenosine aptamers, and that it would have been obvious to apply the anti-adenosine aptamers of Szostak to the target detection method of Gold. Applicant respectfully traverses this rejection.

As set forth above, the Action does not establish that Gold teaches all of the elements of the method recited in independent claim 29. Thus, regardless of whether it would have been obvious to apply the anti-adenosine aptamers of Szostak to the target detection method of Gold, the Action still fails to establish that these references teach or suggest all of the elements of claims 38-39. Applicant, therefore, respectfully requests the withdrawal of this rejection.